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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,405	12/12/2001	Yukito Kawahara	S004-4492	4062

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ADAMS & WILKS
31st Floor
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New York, NY 10004

EXAMINER

HESELTINE, RYAN J

ART UNIT	PAPER NUMBER
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2623

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DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/015,405

Applicant(s)

KAWAHARA, YUKITO

Examiner

Ryan J Hesseltine

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on January 9, 2001. It is noted, however, that applicant has not filed a certified copy of the 2001-001678 application as required by 35 U.S.C. 119(b).

Claim Objections

2. Claims 3 and 6 are objected to because of the following informalities: in the preliminary amendment filed December 23, 2002, claims 3 and 6 were amended and the clean copy of the claims does not agree with the marked-up copy. Lines 4-5 of claim 3 (clean copy) recite, "a length of the respective rows" (emphasis added). Neither the original claim nor the marked-up copy contains the word "respective." It is assumed that applicant intended to add this word but was accidentally omitted from the marked-up copy of the claim. Line 3 of claim 6 (clean copy) recites, "light irradiated by the light source" (emphasis added). The marked-up copy of the claim shows the word "irradiated" in square brackets indicating deletion, but the word is still present in the clean copy of the claim. It is assumed that applicant did not intend to delete this word. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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5. Claim 7 recites the limitation "the contact surface" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 5-10, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujieda et al. (USPN 6,011,860, newly cited, hereafter Fujieda).

8. Regarding claim 1, Fujieda discloses an apparatus for implementing readout of a fingerprint (Figure 3), comprising: a transparent upper base plate 23 having a contact surface that is touched during use by a fingertip of a person 27; a light source 24 for irradiating the contact surface with light such that a portion of the light is reflected when the fingertip touches the contact surface (column 5, line 19-28); an equal magnification lens 25 for forming an image of the person's fingerprint based on the reflected light with equal magnification (magnification ration of 1; column 6, line 5-10); an image sensor 26 having an image pickup surface comprised of a plurality of photoreceptors linearly disposed thereon for detecting the image of the fingerprint (column 6, line 5-16); a lower base plate (bottom of photo-shield case 21) for holding the image sensor in a fixed position relative to the equal magnification lens; and a housing 21 for holding the transparent base plate 23, the light source 24, the equal magnification lens 25, and the upper and lower base plates (Figure 3; column 5, line 29-40).

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9. Regarding claim 7, Fujieda discloses a fingerprint detector (Figure 3) comprising; a housing 21; a transparent plate 23 disposed in the housing; a light source 24 disposed in the housing for irradiating the transparent plate with light such that a portion of the light is reflected when a fingertip 27 touches the contact surface; an image sensor 26 disposed in the housing to receive the reflected light and having a plurality of linearly-arranged photosensors (column 6, line 5-16); and a lower base plate (bottom of photo-shield case 21) disposed in the housing for holding the image sensor (Figure 3; column 5, line 19-40).

10. Regarding claims 2 and 10, Fujieda discloses that the angle of reflection of the reflected light L3 with respect to the fingertip 27 is larger than or approximately equal to the angle of incidence of the light L1 emitted by the light source 24 onto the contact surface of the transparent plate 23 (Figure 3; column 6, line 53-column 7, line 37).

11. Regarding claims 5 and 13, Fujieda discloses that the image sensor (image pickup device) 26 is formed of amorphous silicon (column 7, line 33-37).

12. Regarding claims 6 and 14, Fujieda discloses that the angle of incidence of the light L1 irradiated by the light source 24 onto the contact surface of the transparent plate 23 is smaller than or approximately equal to the angle of reflection of the reflected light L3 (Figure 3; column 6, line 53-column 7, line 37).

13. Regarding claim 8, Fujieda discloses a lens 25 for forming an image of the fingerprint based on the reflected light (column 5, line 19-28; column 6, line 5-10).

14. Regarding claim 9, Fujieda discloses that the lens 25 has an equal magnification (column 6, line 5-10).

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15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujieda as applied to claims 1 and 7 above, and further in view of Kramer et al. (USPN 6,317,508, newly cited, hereafter Kramer).

17. Regarding claims 3 and 11, Fujieda discloses that the image pickup surface of the image sensor has a plurality of photoreceptors (photosensors) arranged in a plurality of rows (column 6, line 5-16), and an alternative embodiment including a moveable linear image sensor 36b (Figure 14; column 10, line 19-33), but does not disclose that a length of the respective rows is more than ten times larger than a length of columns of the photoreceptors (photosensors). Kramer discloses a scanning capacitive semiconductor fingerprint detector 11 including an array 13 of capacitive sensing elements having a first dimension (about one-half inch or 12.8 mm wide) greater than the width of a fingerprint, and a second dimension (about one-tenth inch or 2.5 mm wide) less than the length of a fingerprint (Figure 2; column 2, line 22-37). However, Kramer does not expressly disclose that the width (length of the respective rows) is more than ten times larger than a length of columns of the photoreceptors.

18. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to arrange a plurality of photoreceptors in rows having a length more than ten times larger than a length of columns of the photoreceptors. Applicant has not disclosed that arranging the photoreceptors in rows having a length more than ten times larger than a length of columns

provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well with either the dimensions taught by Kramer or the claimed dimensions because both dimensions perform the same function of an image sensor that is wider than it is long. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange a plurality of photoreceptors in rows having a length more than ten times larger than a length of columns of the photoreceptors as taught by Kramer in order to capture an image of a portion of a fingerprint and assemble the captured images into a fingerprint image as the fingerprint is moved over the array (column 2, line 1-4).

19. Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujieda as applied to claims 1 and 7 above, and further in view of Holehan (USPN 6,337,918, newly cited).

20. Regarding claims 4 and 12, Fujieda discloses that the light source 24 is composed of LEDs (Figure 4, light-emitting diodes 24a/24b; column 5, line 56-column 6, line 4), but does not disclose that the light source is composed of LEDs of two or more colors. Holehan discloses a computer system with integrated touchpad/security subsystem including a touchpad having an infrared light source 20 and an infrared detector 24 mounted on a substrate (Figure 2; column 3, line 31-67), wherein it may be desirable to have each of the sources 20 emit a slightly different wavelength (color) or frequency of light (column 4, line 54-column 5, line 9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use LEDs of two or more colors as a light source as taught by Holehan in order to separately identify energy

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emitted from each of the light sources and reflected from an object on the glass to aid in triangulating the position of the object (column 4, line 64-column 5, line 2).

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 5,892,599 to Bahuguna discloses a miniature fingerprint sensor using a trapezoidal prism and a holographic optical element wherein the incidence angle is smaller than or equal to the angle of reflection. USPN 6,401,551 to Kawahara et al. discloses an electrostatic capacity type fingerprint-reading device provided on a liquid crystal panel. USPN 6,462,563 to Kawahara et al. discloses a fingerprint reading device and method thereof including detecting electrostatic capacity. JP 60-050406 to Osato discloses an irregularity-detecting device wherein the incidence angle is smaller than or equal to the angle of reflection. JP 03-292578 to Kawasaki discloses a fingerprint reading device wherein fingerprint images are formed on a CCD light-receiving plane at an equal magnification.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan J Hesseltine whose telephone number is 703-306-4069. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan J. Hesseltine
October 5, 2004

JINGGE WU
PRIMARY EXAMINER

